

## The State of New Hampshire

## Department of Environmental Services



Michael P. Nolin Commissioner

> April 28, 2004 **Letter of Deficiency** DSP#04-024

Mr. Tom Dutton City of Keene Public Works Dept. 350 Marlboro Street Keene, NH 03431

RE: Three Mile Reservoir Dam #126.09, Keene

Dear Mr. Dutton:

The Department of Environmental Services, Dam Bureau (DES) consistently strives to enhance the safety of dams in New Hampshire through its dam safety program. One of the many instruments that play a part in reaching this goal is our inspection program. DES is forwarding this correspondence to you to advise you that in accordance with RSA 482:12 and Env-Wr 502.02, an inspection of the subject dam was conducted on October 1, 2003. During this visual inspection and/or file review, the following illustrates the status of the deficiencies as noted in our May 22, 2002 Letter of Deficiency:

- 1. The draft operation and maintenance plan (O&M) has been accepted for content. Review and update the attached draft O&M and submit the final copy to our office. This has been accepted but not finalized as was requested in a letter dated September 19, 2002;
- 2. Submit the draft Emergency Action Plan (EAP) to Bethann McCarthy, P.E., our EAP Coordinator. The EAP was completed and accepted for content and needs to be tested as directed.
- 3. Remove the small trees and minor brush observed in the following locations:
  - a. Within the right downstream riprap;
  - b. Along the crest of the right embankment just below the right cutoff wall;
  - c. Along the upstream riprap slope of the dike along Route 10;
  - d. Along the crest, downstream and upstream slope of the small portion of the dike on the western side of Route 10 just west of an existing fence line;
  - e. Within the downstream reach of the overflow spillways;
  - f. Along the crest, downstream and upstream slope of the left earth embankment/abutment;
  - g. Between some of the energy dissipaters at the base of the far left overflow spillway;
  - h. Upstream of the far left overflow spillway;
- 4. Remove the beaver debris downstream within the stoplog bay. This work was conducted and the stoplog bay remained clear of debris on this date;
- 5. Replace the access fence gate that was missing on the left abutment. This has been completed;

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- 6. On the left and right concrete crest of the dam grout the supports for the fence. This was not completed as of this inspection;
- 7. Monitor the seepage at the base of several of the vertical construction joints in both overflow spillways and repair as necessary. This has not changed since the last inspection;
- 8. Monitor the concrete deterioration with shallow voids along the horizontal construction joint, which appeared to be previously patched with a grout cover and repair as necessary. There was no further deterioration as of this inspection; and

The following discrepancies were noted as part of this inspection and file review:

9. There was a 6" diameter rodent hole in the far left embankment approximately 20 feet from the concrete retaining wall in the middle of the downstream slope.

DES believes that the above deficiencies can be corrected by performing the following items by the indicated schedule:

## November 1, 2004:

- 1. Remove the small trees and minor brush observed in the following locations:
  - a. Within the right downstream riprap;
  - b. Along the crest of the right embankment just below the right cutoff wall;
  - c. Along the upstream riprap slope of the dike along Route 10;
  - d. Along the crest, downstream and upstream slope of the small portion of the dike on the western side of Route 10 just west of an existing fence line;
  - e. Within the downstream reach of the overflow spillways;
  - f. Along the crest, downstream and upstream slope of the left earth embankment/abutment;
  - g. Between some of the energy dissipaters at the base of the far left overflow spillway;
  - h. Upstream of the far left overflow spillway;
- 2. Update the O&M plan to include monitoring and repairing as necessary the seepage at the base of several of the vertical construction joints in both overflow spillways and the concrete deterioration with shallow voids along the horizontal construction joint in the left most ogee spillway;
- 3. Grout the supports for the fence on the left and right concrete sections, to be flush with the top of the concrete or above the concrete to eliminate deterioration of the concrete and fence in these areas; and
- 4. Repair the 6" diameter rodent hole in the far left embankment approximately 20 feet from the concrete retaining wall in the middle of the downstream slope.

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DES is requesting that you complete and submit the attached "Intent to Complete Repairs" form, within 30 days of receipt of this letter, that will provide for correction of the identified deficiencies by the date(s) indicated above. Please call or write to our office if the repairs are completed ahead of the aforementioned schedule so that DES may schedule a follow-up inspection. Unless notified otherwise, DES will conduct the follow-up inspection on or after the date(s) indicated above. If you believe changes to the items of work or dates are necessary, please make the changes directly on the form and provide a brief explanation. We have enclosed a self addressed stamped envelope for you to return this form.

Our intent in sending you this correspondence is to make you aware of items that DES believes warrant your attention to insure the continued safe operation of your dam. It is our hope that, through the submittal of the attached form and a commitment to keeping a well-maintained dam, you will voluntarily comply with the requested items of work. If we do not receive the intent form or a similarly adequate written reply, we will assume that you are in agreement with our findings and recommendations and DES will carry out follow-up inspections accordingly.

If you have any questions or comments regarding this Letter of Deficiency or would like to be present at future inspections, please contact me at 271-3406, or write to the Water Division at the address listed on the bottom of the cover page.

Sincerely

Dale F. Guinn, P.E. Dam Safety Engineer